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Response
Via facsimile: (571) 273-8300
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Remarks

Applicant acknowledges with appreciation withdrawal of rejection of: claims 17-33 under 35 U.S.C. §102(c) in view of Bornstein, and claim 20 under 35 U.S.C. §112 ¶2.

Upon entry of this Response, claims 17-33 remain pending.

Prior to addressing issues in the Office action, Applicant believes that a brief description of independent claims 17 and 28 would be helpful to the reader.

Claim 17 is directed to a method for selecting optimized transmission path in a television distribution network, the method including the steps of: receiving information relating to data to be transmitted to at least one set-top box, the information including metadata related to the data to be transmitted and an identification of the at least one set-top box; building a list of available transmission paths for the set-top box; and selecting an optimal transmission path based on the list and the metadata; and transmitting the data to the set-top box using the selected transmission path.

Claim 28 is directed to an apparatus for selecting optimized transmission in a television distribution network having a headend and a plurality of set-top boxes, the apparatus includes: a list creator, adapted to create a list of available transmission paths from the headend to a specified set-top box, or a group of specified set-top boxes; and, a data route selector, adapted to automatically select the best applicable transmission path from the list for transmitting based on a policy applied to the combination of at least a data type to be transmitted and the list.

Claims comply with 35 U.S.C. §103(a)

The Office action rejects claims 17-33 under 35 U.S.C. §103(a) in view of Bornstein et al. (U.S. patent application number 2008/0008089, published January 10, 2008) in combination with Urdang et al., newly cited, (U.S. patent application number 2007/0083902, published April 12, 2007). Applicant respectfully traverses.

The ultimate determination of whether an invention would have been obvious under 35 U.S.C. §103(a) is a legal conclusion based on underlying findings of fact. *In re Kotzab*, 217 F.3d 1365, 1369 (Fed. Cir. 2000).

According to a summary of criteria in the M.P.E.P., "[t]o establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or

motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure." [emphasis added] M.P.E.P. §2142; *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

A recent decision by the U.S. Supreme Court, *KSR International Co. v. Teleflex Inc.* 550 U.S.____ (2007), discusses criteria for showing a motivation to combine numerous prior art references in a determination that a claimed invention is obvious. The U.S. Supreme Court in *KSR* explained that "[t]here is no necessary inconsistency between the idea underlying the TSM [teaching, success, motivation] test and the *Graham* analysis." *KSR International Co.* 550 U.S.____ at p. 15. In fact, the court explains "... it can be important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the newly claimed invention does." Id.

This interpretation of *KSR International Co. v. Teleflex Inc.* is confirmed by Guidelines promulgated by the U.S. Patent and Trademark Office and published October 10, 2007 in the Federal Register (vol. 72, no. 195, pp. 57526-57535).

As a preliminary matter, the Supreme Court in *Graham v. John Deere*, 383 U.S. 1 provides an analytical construct to be used when determining whether claims are obvious under 35 U.S.C. §103(a) in view of prior art. One aspect of this analytical construct includes characterizing the prior art, as a background for a legal analysis.

Bornstein et al., U.S. patent application number 2008/0008089, published January 10, 2008

Bornstein taken as a whole shows a routing mechanism operating in a content delivery network (CDN; Bornstein et al., Abstract). In a CDN, edge servers are organized into regions, with each region including a set of content servers that operate to share data across a common backbone such as a local area network (Ibid. Abstract). Delivery of content in a CDN is initiated by a request to an edge server from an end-user (Ibid., ¶s [0006], [0007], [0030], and FIG. 1).

Bornstein shows a routing technique that allows an edge server operating within a given CDN region to retrieve content from an origin server by selectively routing through the CDN's own nodes in order to avoid network congestion and hot spots (Ibid. Abstract). Bornstein's routing service predicts a best path for a data transfer between a source location (e.g., a content provider origin server) and a target location (e.g., a CDN edge server) by analyzing some performance metric common to a set of possible routes (Ibid., ¶ [0016]).

The performance metric is evaluated by having the edge server initiate a file download "race" in response to receiving a request for given content, i.e., a number of simultaneous downloads of the given content are initiated from the source location over a plurality of routes, some of which may include intermediate nodes, and the winning path is then used for transfers between the source and the target locations for a given time period (Ibid., ¶ [0016]).

The identification of the intermediate nodes, i.e., alternative routes, to use for the race is determined in an off-line mapping process by performing given network traffic tests (Ibid., ¶ [0017]). Bornstein's mapping process is performed by a separate computer program running elsewhere in the network (Ibid., ¶ [0033]).

Bornstein's map making process performs network tests and uses the results of those tests to generate a map including a plurality of routes: the best route to the customer site, the best intermediate or "middle" region for tunneling, and the next best middle region (Ibid., ¶ [0018]). Factual analysis demonstrates that Bornstein's mapping process generates only three routes for data to travel through, a best route and two alternative intermediate routes.

Nowhere does Bornstein show a method or apparatus for selecting optimized transmission path in a television distribution network, to which claims 17 and 28 are respectively directed. In contrast to claims 17 and 28, Bornstein shows a routing mechanism operating in a CDN, in which delivery of content is initiated by a request from an end-user to an edge server (Bornstein et al., ¶¶ [0006], [0007], [0030], and FIG. 1). The phrase "television distribution network" is not even mentioned in Bornstein. For at least this reason, Bornstein's routing mechanism is not the same as the method and apparatus that are the subject matter of claims 17 and 28 respectively.

Further, Bornstein fails to show receiving information relating to data to be transmitted to at least one set-top box. The information that Bornstein fails to show includes metadata related

to the data to be transmitted and an identification of the at least one set-top box. In contrast, Bornstein shows transmitting data to a computer (Ibid., FIG. 1). Further, as the term "set-top box" is not even mentioned in Bornstein, Bornstein necessarily fails to show identification of the at least one set-top box. Even further, as Bornstein's routing mechanism is unrelated to a television distribution network and set-top boxes, Bornstein fails to show receiving information relating to data to be transmitted to at least one set-top box, to which claim 17 is directed.

Nowhere does Bornstein show a method or an apparatus that includes building or creating a list of available transmission paths for the set-top box, to which claims 17 and 28 are respectively directed. In contrast, Bornstein shows an off-line mapping process running elsewhere in the network from Bornstein's routing mechanism, in which the map-making program generates a map including only three routes for data to travel through, a best route and two alternative intermediate routes (Ibid., ¶¶ [0017], [0018], [0033], and FIG. 2). Using an off-line mapping process running elsewhere in the network to generate a map that includes only three routes is not the same as building or creating a list of available transmission paths for the set-top box, to which claims 17 and 28 are respectively directed.

Bornstein fails to show selecting an optimal transmission path based on the list and the metadata, to which claims 17 and 28 are respectively directed. In contrast, Bornstein shows selecting an optimal route based on "races", i.e., an actual test in which a number of simultaneous downloads of the given content are initiated from the source location over a plurality of routes, some of which may include intermediate nodes, and the winning path is then used for transfers between the source and the target locations for a given time period (Ibid., ¶¶ [0016] and [0033]).

Nowhere does Bornstein show transmitting the data to the set-top box using the selected transmission path, to which claims 17 and 28 are respectively directed. In contrast, Bornstein shows transmitting data from an origin server to an edge server and ultimately to a computer (Ibid., FIG. 1).

Bornstein fails to show an apparatus that includes a list creator and a data route selector, to which claim 28 is directed. In contrast, Bornstein shows an off-line mapping process running elsewhere in the network from Bornstein's routing mechanism, in which the map-making program generates a map including only three routes for data to travel through, a best route and

two alternative intermediate routes (Ibid., ¶¶ [0017], [0018], [0033], and FIG. 2). In fact, Bornstein states that his routing mechanism obtains the route map from a separate map maker program, operating elsewhere in the network (Ibid., ¶ [0033]).

Urdang et al., U.S. patent application number 2007/0083902, published April 12, 2007

Urdang taken as a whole shows a system for timing the burst transmission of data packets on a single cable television line.

Urdang shows a processor 109, which extracts program content in analog or digital television streams and reformats the content to form one or more MPEG-2 encoded transport streams. Ibid, ¶ [0030]. An MPEG-2 transport stream contains multiple program streams with different video and audio feeds multiplexed for transmission through the same transmission channel. Ibid, ¶ [0031]. The transmission channel is a 6 MHz band of a coaxial cable which is allocated for downstream communication from a headend to a set-top terminal. Ibid, ¶ [0032]. Thus, Urdang shows transmitting from a headend over a single coaxial cable to a set-top terminal as is commonly known in cable television distribution systems.

Nowhere does Urdang show selecting a physical path to a set-top terminal.

In Urdang's system, when a user selects a particular program channel the set-top terminal scans for any transport streams transporting programs to the neighborhood. Ibid, ¶ [0046]. Each transport stream is identified by a unique transport identification stream (TSID). Ibid, ¶ [0046]. Once the TSIDs of the transport streams are detected, the terminal sends a request for program channel material. Ibid, ¶ [0047]. This request includes a destination field which contains the IP address of the network controller for which the request is destined; a request data field which contains data concerning the detected TSIDs and the requested program channel material; and origination field which contains the internet protocol (IP) (and/or media access control (MAC)) address of the terminal from which the request originates. Ibid, ¶ [0047].

Urdang's network controller 125 reads the received request to learn the TSID's then communicates with media processor 119 to determine the capacity required for transmitting requested program material and associated interactive application data. Ibid, ¶ [0048]. Based on the required capacity, controller 125 selects a transport stream suitable for transporting the requested program material and associated interactive application data. Ibid, ¶ [0048]. The

network controller then identifies the carrier carrying the selected transport stream and interactive data. Ibid, ¶ [0048]. At this step the network controller may include a carrier assignment table which lists, for each carrier, the TSID of the transport stream it carries. Ibid, ¶ [0050]. Once selected, the transport stream is punctuated with the associated interactive application data in accordance with the timing diagram of FIG. 2. Ibid, ¶ [0050].

The Office action alleges on Page 3 that motivation to combine Bornstein and Urdang is due to the fact that both references deal with transmission of requested information via multiple transmission paths in a network. "Therefore the invention would have been obvious to one of ordinary skill in the art at the time of the invention to ensure data is received timely." However, the Office action admits on page 3 that Urdang fails to disclose selecting an optimal transmission path based on a list and metadata. In fact, as shown in the above factual analysis, Urdang fails to show selecting optimal transmission paths instead showing in band transmission.

Further, Urdang disparages out of band transmission:

> To more effectively utilize the transmission channel bandwidth, out-of-band transmission of interactive application data has been proposed, which requires that the interactive application data be transmitted through a different channel or broadcast mechanism than that of the transport stream. However, this approach is not cost effective as it normally calls for additional communication facilities, including an elaborate arrangement for synchronizing the transmissions of the interactive application data and the corresponding transport stream through different channels or broadcast mechanisms. Urdang, ¶ [0010].

References fail to teach all the subject matter of the claims

As shown above, the M.P.E.P. states that to establish a *prima facie* case of obviousness the prior art reference (or references when combined) must teach or suggest all the subject matter of the claim.

The Office action on p. 3 ¶5 alleges that Bornstein FIG. 1 and ¶¶ [0032-0033] shows selecting an optimal transmission path based on a list and metadata. Applicant respectfully traverses.

For convenience of the reader, the sections of Bornstein ¶¶ [0032-0033] cited in the Office action are reproduced below:

[0032] Instead of using content provider-side migration (e.g., using the tool **106**), a participating content provider may simply direct the CDNSP to serve an entire domain (or subdomain) by a DNS directive (e.g., a CNAME). In such case, the CDNSP may provide object-specific metadata to the CDN content servers to determine how the CDN content servers will handle a request for an object being served by the CDN. Metadata, as used herein, thus refers to the set of all control options and parameters for the object (e.g., coherence information, origin server identity information, load balancing information, customer code, other control codes, etc.), and such information may be provided to the CDN content servers via a configuration file, in HTTP headers, or in other ways. A configuration file is advantageous as it enables a change in the metadata to apply to an entire domain, to any set of directories, or to any set of file extensions. In one approach, the CDNSP operates a metadata transmission system **116** comprising a set of one or more servers to enable metadata to be provided to the CDNSP content servers. The system **116** may comprise at least one control server **118**, and one or more staging servers **120***a-n*, each of which is typically an HTTP server (e.g., Apache). Metadata is provided to the control server **118** by the CDNSP or the content provider (e.g., using a secure extranet application) and periodically delivered to the staging servers **120***a-n*. The staging servers deliver the metadata to the CDN content servers as necessary.

[0033] FIG. 2 illustrates a typical machine configuration for a CDN content edge server. Typically, the content server **200** is a caching appliance running an operating system kernel **202**, a file system cache **204**, CDN software **206**, TCP connection manager **208**, and disk storage **210**. CDN software **206**, among other things, is used to create and manage a "hot" object cache **212** for popular objects being served by the CDN. For HTTP content, the content server **200** receives end user requests for content, determines whether the requested object is present in the hot object cache or the disk storage, serves the requested object via HTTP (if it is present), or establishes a connection to another content server or an origin server to attempt to retrieve the requested object upon a cache miss. Generalizing, a cache miss can occur when the requested object is not in cache, when the requested object is in cache but is stale, when the requested object is non-cacheable, or the like. In all such cases, it may be necessary for the edge server to contact a content provider origin server to fetch the requested object. The present invention provides a technique for enabling the edge server to use an optimal path for that communication. To that end, CDN software **206** includes a guide process **215** that performs various functions to facilitate the optimized routing technique of the present invention. Generally, guide process **215** fetches a route map from a map maker process **220** (running elsewhere in the network), initiates performance metric tests (e.g., download races) on various routes identified in the map, collects and analyzes the results of those tests, and orders the routes accordingly so that the edge server can communicate with a content provider origin server via an optimal route whenever necessary. As used herein, "optimal" is not necessarily the best possible route in any kind of absolute sense; rather, it is a best route

> found given whatever constraints are then imposed on the network, varous [sic] systems, connectivity constraints, and the like. The guide process is a computer program code, i.e., a series of program instructions, executable by a processor. (emphasis added)

Bornstein in ¶ [0033] clearly shows a routing mechanism that retrieves an already prepared map, generated by a separate map maker process running elsewhere in the network, i.e., a separate and distinct computer program. Thus ¶ [0033] of Bornstein does not show building a list of available transmission paths for the set-top box, to which claim 17 is directed. Rather, this section of Bornstein explicitly shows retrieving an already prepared route map made by a separate computer program operating elsewhere in the network.

Further, this section of Bornstein necessarily fails to show selecting an optimal transmission path based on the list and the metadata, to which claim 17 is directed. Rather, this section of Bornstein states that download races determine an optimal path for data to be transmitted, i.e., an actual test in which a number of simultaneous downloads of the given content are initiated from the source location over a plurality of routes, some of which may include intermediate nodes, and the winning path is then used for transfers between the source and the target locations for a given time period.

Yet further, the above sections of Bornstein refer to metadata in the context of delivering metadata when a participating content provider directs the CDNSP to serve an entire domain by a DNS directive. Nowhere do the above paragraphs show metadata used to select a transmission path.

FIG. 1 of Bornstein shows a box labeled "Metadata Control" which is connected to staging and CDN server boxes. Nowhere does FIG. 1 show a list or metadata used to select a transmission path.

The Office action on p. 5 ¶14 alleges that Bornstein in FIG. 1-2 and ¶[0034] shows a data route selector for selecting the best applicable transmission path from a list for transmitting based on a policy applied to the combination of a data type to be transmitted and the list. Applicant respectfully traverses.

For convenience of the reader, Bornstein ¶ [0034] cited in the Office action is reproduced below:

> [0034] Generalizing, the present invention may be implemented as a routing mechanism, service or system in a distributed networking environment. One preferred environment is a content delivery network wherein the present invention provides improved connectivity back to an origin server for HTTP traffic. As noted above, a CDN service provider typically segments its servers into regions, with each region comprising a set of content servers (e.g., up to about ten (10) servers) that preferably operate in a peer-to-peer manner and share data across a common backbone such as a local area network (LAN). The inventive routing technique enables an edge server operating within a given CDN region to retrieve content (cacheable, non-cacheable and the like) more efficiently by selecting routing through the CDN's own nodes, thereby avoiding network congestion and hot spots. The invention thus enables an edge server to fetch content from an origin server through an intermediate CDN server or, more generally, enables an edge server within a given first region to fetch content from the origin server through an intermediate CDN region. As used herein, this routing through an intermediate server, node or region is sometimes referred to as "tunneling". (emphases added)

In contrast to showing a data route selector for selecting the best applicable transmission path from a list for transmitting based on a policy applied to the combination of a data type to be transmitted and the list, the above paragraph mentions no list whatsoever and is directed to an edge server within a region of a CDN operating in a peer to peer manner by selecting routing through the CDN's own nodes. Further, FIG. 1 and FIG. 2 show no list whatsoever. However, both figures show a box clearly labeled "Map Maker", which is clearly the source of routing rather than a list.

Urdang does not cure the deficiencies of Bornstein.

The Office action alleges on p. 3 ¶ 5 that Urdang discloses a method for selecting an optimized transmission path the method comprising the steps of: receiving information relating to data to be transmitted to at least one set-top box, building a list of available transmission paths; and transmitting the data to the set-top box using selected transmission path. The Office action also alleges on p. 5 ¶ 14 that Urdang, FIG. 1-4, p. 2-3, ¶¶ [0002-0032], discloses a list creator adapted to create a list of available transmission paths from the headend to a specified set-top box. Applicant respectfully traverses.

The cited paragraphs in Urdang discuss multiple program streams but nowhere do they show a list of paths being created. Urdang ¶ [0031]. Factual analysis of the cited paragraphs fails to show any mention of a list creator. Further, the word "list" does not appear in Urdang

until ¶ [0050]. In ¶ [0050] Urdang briefly mentions that optionally the network controller may include a carrier assignment table listing for each carrier the TSID of data stream it carries. This table is not an analytical or optimizing feature of Urdang's system, rather it is simply a lookup of data stream and carrier correlations. Ibid. Far from such program streams mentioned in Urdang being in a list created by a list creator, these program streams are pre-scheduled for times such as 7:00 p.m. to 7:30 p.m. Urdang ¶ [0036].

Thus, factual analysis of Urdang indicates that this reference does not show any of: building a list of available transmission paths, a "list creator", or creating a list of available transmission paths, to which the subject matter of claims 17 and 28 is *inter alia* directed. Therefore, Applicant respectfully requests additional information regarding this rejection.

The combination of Bornstein and Urdang fails to render obvious the subject matter of claims 17 and 28 because the prior art references when combined do not teach or suggest all of the subject matter of the claims, as required by M.P.E.P. §2142. Therefore a *prima facie* case of obviousness has not been made. Therefore claims 17 and 28 comply with 35 U.S.C. §103(a).

For at least these reasons, Applicant respectfully requests withdrawal of rejection of claims 17-33 under 35 U.S.C. §103(a) in view of Bornstein in combination with Urdang.

No motivation to combine because the references solve different problems

The Office action on page 3 Paragraph 5 alleges that motivation to combine Urdang and Bornstein is due to the fact that both references deal with transmission of requested information via multiple transmission paths in a network. Applicant respectfully traverses.

The Manual of Patent Examination Procedure states that to reject a claim based on the rationale that the claim is a use of a known technique to improve similar methods in the same way, Office personnel must first resolve the Graham factual inquiries and then must articulate the following:

(1) a finding that the prior art contained a "base" device (method, or product) upon which the claimed invention can be seen as an "improvement;"

(2) a finding that the prior art contained a "comparable" device (method, or product that is not the same as the base device) that has been improved in the same way as the claimed invention;

(3) a finding that one of ordinary skill in the art could have applied the known "improvement" technique in the same way to the "base" device (method, or product) and the results would have been predictable to one of ordinary skill in the art; and

(4) whatever additional findings based on the Graham factual inquiries may be necessary, in view of the facts of the case under consideration, to explain a conclusion of obviousness. M.P.E.P. §2143.

The M.P.E.P cites *Ruiz v. AB Chance Co.*, 357 F.3d 1270, 69 USPQ2d 1686 (Fed. Cir. 2004) as an example of a use of a known technique to improve similar devices, methods or products in the same way. M.P.E.P. 2143. The invention in Ruiz v. AB Chance Co. was a system which employed a screw anchor for underpinning existing foundations and a metal bracket to transfer the building load onto the screw anchor. M.P.E.P, 2143. The prior art (Fuller) used screw anchors for underpinning exiting structural foundations. Ibid. Fuller used a concrete haunch to transfer the load of the foundation to the screw anchor. Ibid. The other prior art reference (Gregory) used a push pier for underpinning existing structural foundations. Ibid. Gregory taught a method of transferring load using a bracket, specifically: a metal bracket transfers the foundation load to the push pier. Ibid. The push pier is driven into the ground to support the load. Ibid. Neither reference showed the two elements of the claimed invention – screw anchor and metal bracket – used together. Ibid. The court found that the nature of the problem to be solved – underpinning unstable foundations – as well as the need to connect the member to the foundations to accomplish this goal, would have led one of ordinary skill in the art to choose an appropriate load bearing member and a compatible attachment. Ibid. Therefore, it would have been obvious to have used a metal bracket (as shown in Gregory) in combination with the screw anchor (as shown in Fuller) to underpin unstable foundations. Ibid.

In contrast to Ruiz in which the prior art showed the same base device as the invention, Bornstein and Urdang do not show the same base device as the invention and therefore do not meet criterion 1. In further contrast to *Ruiz*, Urdang does not show a comparable device to either Bornstein or Applicant's claimed invention. Urdang shows a system which optimizes time slots for interactive application data transmission on a single transmission frequency whereas Bornstein shows a system to optimize the edge server to origin server communication path in a sophisticated Content Delivery Network (CDN).

The M.P.E.P. states in citing *Ruiz* that the nature of the problem to be solved may lead inventors to look at references relating to possible solutions to that problem. M.P.E.P., 2143, citing *Ruiz v. AB Chance Co.* 357 F.3d 1270, 1277 69 USPQ2d 1686, 1691 (Fed. Cir. 2004). Distinct from *Ruiz,* the problem to be solved in Bornstein and Urdang are similar only in that they both concern the transmission of digital data.

Urdang and Bornstein show different solutions to different problems. Urdang's system solves the problem of periodic time slots used by interactive application data being wasted. Urdang, ¶ [0009]. Urdang's system corrects this ineffective utilization of the bandwidth of the transmission channel using in band transmission of burst packets with selection for the optimal time for transmission. Ibid, [0009], [0010], [0011]. The stated objective of Bornstein's system is to provide improved techniques to optimize the edge server to origin server communication path in a sophisticated Content Delivery Network (CDN). Bornstein ¶ [0015] This optimization improves the ability of the CDN to route around network congestion and other problems. Ibid. Bornstein shows a system to provide a route through tunneling etc through multiple nodes and edge servers. Ibid. Thus, factual analysis of Bornstein and Urdang shows that these references use different solutions to different problems. Therefore there would have been no motivation to have combined Bornstein and Urdang at the time the present application was filed.

As the above factual analysis shows, Bornstein and Urdang show different solutions to different problems on different systems. Therefore, unlike the case in Ruiz, there would have been no motivation to combine Bornstein and Urdang at the time the application was filed because Urdang and Bornstein solve different problems on different types of networks.

The combination of Urdang and Bornstein fails to render obvious the subject matter of claims 17 and 28 because in distinction from *Ruiz* the references show different solutions to different problems. M.P.E.P. §2143, p. 129; *Ruiz v. AB Chance Co.,* 357 F.3d 1270, 1277 69 USPQ2d 1686 (Fed. Cir 2004). Therefore for this reason also, a *prima facie* case of obviousness has not been made.

Applicant respectfully requests withdrawal of rejection of claims 17-33 under 35 U.S.C. §103(a) in view of Bornstein in combination with Urdang.

No motivation to combine references having different principles of operation

To establish that a claim does not comply with 35 U.S.C. §103(a) based on a combination of the elements disclosed in the prior art in the absence of any hindsight, there must be some motivation, suggestion or teaching of the desirability of making the specific combination that was made by the applicant. M.P.E.P., §2143.01, p. 135; *In re Fulton*, 391 F.3d at 1200-01, 73 USPQ2d at 1145-46 (Fed. Cir. 2004). The teaching or suggestion, not merely to make the claimed combination, but also of a reasonable expectation of success, must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488; 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991).

The U.S. Supreme Court in *KSR International Co. v. Teleflex Inc.* affirmed the legal principle that the mere fact that each element of a claimed invention could be found within the prior art does not render the claimed invention obvious. The court stated:

> .... A patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art. *KSR International Co.* 550 U.S.____ at p. 14

The M.P.E.P. states "[I]f the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious." M.P.E.P. §2143.01, p. 138; *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959).

In *In re Ratti*, 270 F.2d 810 (CCPA 1959), claims were directed to an oil seal having a bore engaging portion with outwardly biased resilient spring fingers inserted in a resilient sealing member. The primary reference relied upon in a rejection based on a combination of references showed an oil seal in which the bore engaging portion was reinforced by a cylindrical sheet metal casing. The prior art device required rigidity for operation, whereas the claimed invention required resiliency. The court reversed the rejection holding that the "suggested combination of references would require a substantial reconstruction and redesign of the elements shown in [the primary reference] as well as a change in the basic principle under which the [primary reference] construction was designed to operate." See M.P.E.P. §2143.01 citing *In re Ratti* 270 F.2d at 813.

Applicant shows below that there would have been no motivation to have combined Urdang and Bornstein to at the time the invention was made, because such a combination would have required a change in the principle of operation of Bornstein.

Bornstein shows a system that uses edge servers and tunneling to direct traffic around network slow spots. Bornstein chooses different paths by selecting the nodes to pass through. Bornstein Abstract. Further, Bornstein uses races between file downloads to determine which physical route is best. Bornstein ¶ [0016]. Thus, factual analysis above demonstrates that Bornstein's system requires selecting a physical path through CDN nodes based on download race data to provide optimization.

Factual analysis further demonstrates that Urdang does not optimize transmission by selecting a physical path through CDN nodes based on download race data to provide optimization. Instead, Urdang shows using in band transmission on a cable TV transmission channel. Urdang ¶ [0032]. In fact, Urdang, the later reference, disparages the use of out of band transmission as not cost-effective. Ibid., ¶ [0010]. Urdang chooses an appropriate time and transmission stream and channel to send application interface and other data. Ibid., ¶ [0050]. Urdang selects the best time for burst transmission of interactive application data using the network controller and processor 119. Ibid., ¶ [0048]. Thus factual analysis above demonstrates that Urdang's system requires in band burst transmission of data on a single transmission channel that is optimized by selecting a time slot.

As in *In re Ratti* in which the prior art required rigidity whereas the claimed invention required resiliency, Bornstein describes a system that selects a physical path through CDN nodes based on download race data to provide optimization, whereas Urdang's system requires in band burst transmission of data on a single transmission channel that is optimized by selecting a time slot.

To have combined these two references would have required eliminating Bornstein's out of band transmission with routing through different nodes optimized by selection of a physical path, which is a central principle of operation in Bornstein. To have combined Urdang with Bornstein would have required a change to Bornstein's principle of operation to have instead optimized transmission by selection of time slots. Therefore, there would have been no motivation to have combined these references at the time the present invention was made, as such a combination would have required a change in the principle of operation of Bornstein.

The combination of Bornstein and Urdang fails to render obvious the subject matter of claims 17 and 28 for at least the reason that the proposed modification or combination of the

prior art would have changed the principle of operation of Bornstein's method. M.P.E.P. §2143.01, p. 138; In re Ratti, 270 F.2d 810, 123 USPQ 349 (CCPA 1959). Therefore for this reason also, a *prima facie* case of obviousness has not been made.

Claims 18-27 and 29-33 depend directly or indirectly from claims 17 or 28 and incorporate all of the subject matter of these claims and include additional subject matter. As the combination of Bornstein and Urdang fails to render obvious the subject matter of claims 17 and 28, therefore claims 18-27 and 29-33 also are not obvious in view of Bornstein and Urdang alone or in combination.

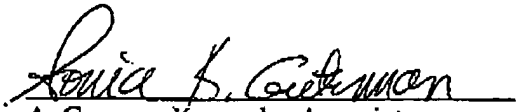
Applicant respectfully requests withdrawal of rejection of claims 17-33 under 35 U.S.C. §103(a) in view of Bornstein in combination with Urdang.

Summary

On the basis of the foregoing amendments and reasons, Applicant respectfully submits that the pending claims are in condition for allowance, which is respectfully requested.

If there are any questions regarding these remarks, the Examiner is invited and encouraged to contact Applicant's representative at the telephone number provided.

Respectfully submitted,



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